Prop-078: Reserving /10 IPv4 address space to facilitate IPv6 deployment

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Introduction

- This proposal seeks to stimulate native IPv6 deployment as much as possible, while supporting the **need for IPv6 networks to communicate with the IPv4 world**

- It is proposed that when APNIC receives its last /8 IPv4 allocation from IANA, **a contiguous /10 IPv4 block** will be set aside and **dedicated to facilitate IPv6 deployment**

Current Status

- The Internet will still use IPv4 for many years during the adoption of IPv6, LIRs will need to connect to the IPv4 Internet while they deploy services using the IPv6 Internet
- Current "final /8" policy provides one single /22 allocation to each LIR, does not require LIRs to deploy IPv6

Position in other RIR regions

- **ARIN** has **adopted** a similar policy:
  2008-5: Dedicated IPv4 block to facilitate IPv6 Deployment
- **RIPE** has similar policy proposal **under discussion:**
  2009-04: IPv4 Allocation and Assignments to Facilitate IPv6 Deployment
- AfriNIC and LACNIC currently have no similar policies or proposals

Details of the Proposal

- 1. When APNIC receives its last /8 IPv4 allocation, a **contiguous /10** IPv4 block from the /8 will be set aside and dedicated to facilitate IPv6 deployment
- 2. Allocations and assignments from this dedicated /10 block must be **justified by immediate IPv6 deployment needs** (key dual stack devices, NAT-PT or NAT464 translators, DNS servers,etc.)

Details of the Proposal

- 3. The size of each allocation from this /10 block is **/24, or APNIC's minimum allocation size**, which ever is smaller.
- 4. Allocations under this policy **do not affect** an LIR's **eligibility** to apply for IPv4 addresses under the "**final /8' policy**", and vice versa

Details of the Proposal

- First allocation or assignment:

1. The applicant must demonstrate immediate IPv6 deployment needs, especially for **IPv6 to IPv4 internetworking**
2. The applicant must either have **existing IPv6** addresses or **valid application for IPv6** addresses.
3. The applicant must be a current APNIC account holder or a member of a NIR.

Details of the Proposal

- Subsequent allocation or assignment:
  1. **Immediate IPv6 deployment needs**, especially for **IPv6 to IPv4 internetworking**
  2. Not have received resources under this policy in the **preceding 12 months**
  3. Previous allocations/assignments under this policy must be strictly used to facilitate IPv6 deployment, and the utilization rate is **higher than 75%**
  4. The utilization rate of previous allocations/assignments of other IPv4 addresses allocated from APNIC must **reach 80%**
  5. The applicant must be a current APNIC account holder or a member of a NIR

Advantages

- **Stimulate IPv6 deployment** as it ensures LIRs can receive dedicated IPv4 address space from the APNIC if they have an immediate need to deploy IPv6.

- Support the need for **native IPv6 networks to communicate with the IPv4 world**

Disadvantages

- There is a remote possibility that, after setting aside one /10, the remainder of the last /8 may be used up. If that were to happen, LIR would need to have immediate IPv6 deployment needs to qualify for IPv4 addresses from APNIC

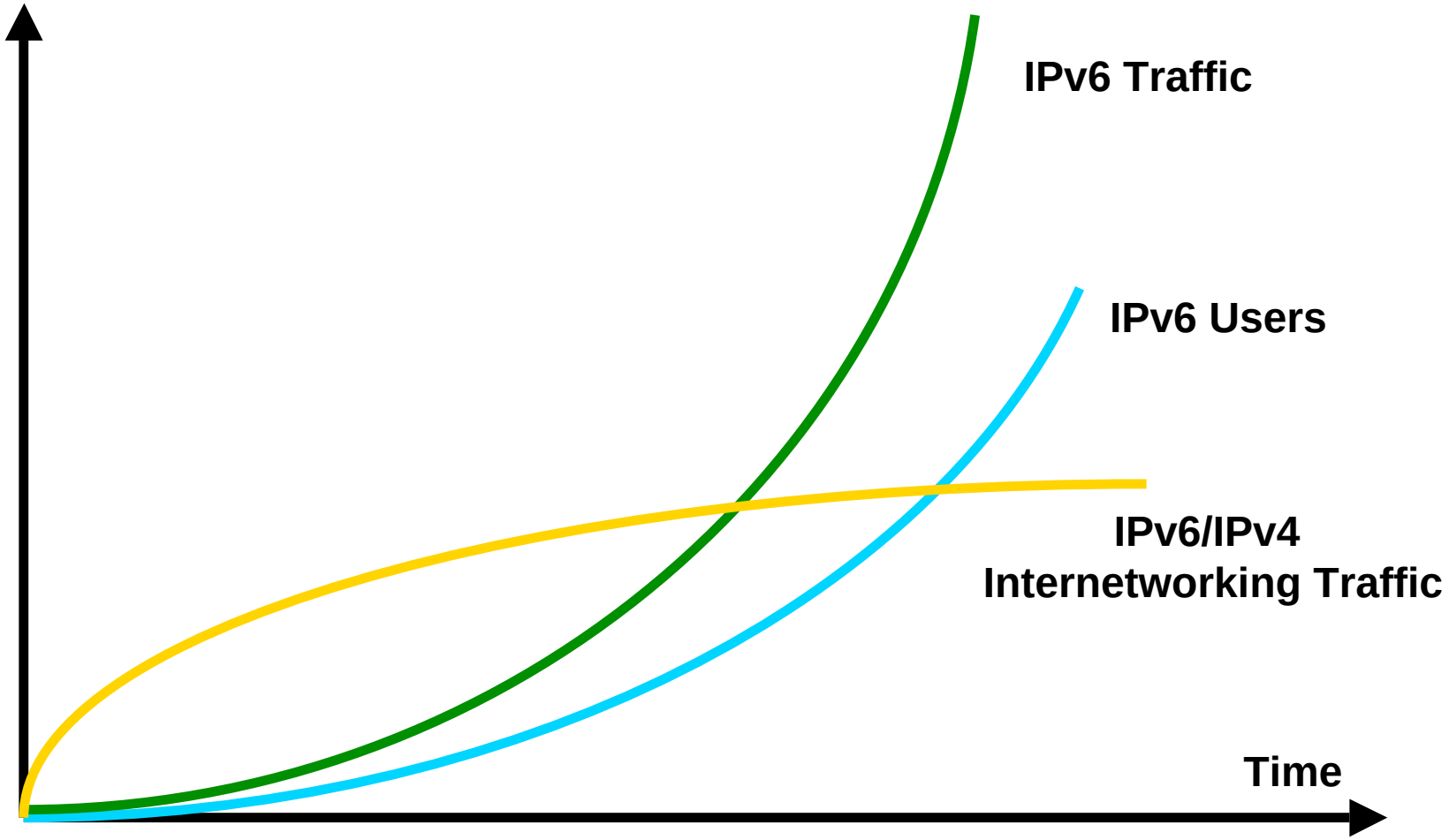
- However, with 12,288 possible allocations, and considering that the projection of APNIC members in 2013 is 4000, it is not likely the 12,288 allocations will be used up

Rationale: Reserving a contiguous /10

- IPv4 and IPv6 may co-exist for many years, the **demand** for IPv6 to IPv4 internetworking will be sustained for many years
- “Final /8" will provide 16384 allocations. Setting aside a /10 will reduce the allocations to 12288, currently APNIC has about 2000 members, so it is **feasible** to set aside a /10
- The dedicated /10 block itself can provide **16384 allocations** with the /24 allocation size
- Allow the possibility of **future special technical handling** (filters, QoS, etc.) of this specific block

Rationale: Reserving a contiguous /10

- The demand for IPv6 to IPv4 internetworking will be stable at a certain level



Rationale: /24 allocation size

- IPv6/IPv4 internetworking purpose (key dual stack devices, NAT-PT or NAT464 translators, DNS, etc.)
- /24, or even a /27, can perfectly satisfy the needs for one organization
- If longer route prefixes are more generally accepted in the future, size can be reduced to suit future needs, and more allocations from this block are possible
- Relatively larger allocation size will minimize the possibility of an organization getting multiple non-contiguous small blocks

Questions?